

Emission Calculations
From One (1) NG Fired Turbine A-01
EPNG - White Rock Compressor Station
E 1/4 Section 15, Township 23-N, Range 14-
22 miles east of Newcomb, New Mexico

Heat Input Capacity MMBtu/hr	Max. Power Output hp
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79.2	10,040
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1. Potential to Emit of Criteria Pollutants

Pollutant	PM*	PM10*	SO ₂ *	NO _x **	VOC*	CO**
Emission Factor	6.60E-03 (lbs/MMBtu)	6.60E-03 (lbs/MMBtu)	3.40E-03 (lbs/MMBtu)	40.41 (lbs/hr)	2.10E-03 (lbs/MMBtu)	7.33 (lbs/hr)
PTE (tons/yr)	2.29	2.29	1.18	177.0	0.73	32.1

*The emission factors for PM, PM10, SO₂, and VOC are from AP-42, Chapter 3.1, Table 3.1-2a for Stationary Gas Turbines

**The NOx, and CO emission factors are from permit PSD-NM-1000-B.

Methodology

PTE of PM, PM10, SO₂, and VOC (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x

PTE of NOx and CO (tons/yr) = Emission Factor (lbs/hr) x 8760 hrs/yr x 1 ton/2000 lbs

2. Potential to Emit HAPs

Pollutant	Emission Factor (lbs/MMBtu)	PTE of HAP (tons/yr)
1,3-Butadiene	4.30E-07	1.49E-04
Acetaldehyde	4.00E-05	1.39E-02
Acrolein	6.40E-06	2.22E-03
Benzene	1.20E-05	4.16E-03
Ethylbenzene	3.20E-05	1.11E-02
Formaldehyde	7.10E-04	2.46E-01
Naphthalene	1.30E-06	4.51E-04
PAH	2.20E-06	7.63E-04
Propylene Oxide	2.90E-05	1.01E-02
Toluene	1.30E-04	4.51E-02
Xylene	6.40E-05	2.22E-02
Total HAPs		0.33

Note: Emission factors are from AP-42, Chapter 3.1, Table 3.1-3 for NG Fired Stationary Turbine (04/00).

Methodology

PTE of HAPs (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2000 lbs

Emission Calculations
From One (1) NG Fired Turbine A-02
EPNG - White Rock Compressor Station
E 1/4 Section 15, Township 23-N, Range 14-
22 miles east of Newcomb, New Mexico

Heat Input Capacity Max. Power Output
 MMBtu/hr hp

93.9	13,830
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1. Potential to Emit of Criteria Pollutants

	Pollutant	PM*	PM10*	SO ₂ *	NO _x **	VOC*	CO**
Emission Factor		6.60E-03 (lbs/MMBtu)	6.60E-03 (lbs/MMBtu)	3.40E-03 (lbs/MMBtu)	15.16 (lbs/hr)	2.10E-03 (lbs/MMBtu)	10.68 (lbs/hr)
PTE (tons/yr)		2.71	2.71	1.40	66.4	0.86	46.8

*The emission factors for PM, PM10, SO₂, and VOC are from AP-42, Chapter 3.1, Table 3.1-2a for Stationary Gas Turbines

**The NO_x and CO emission factors are the emission limits in permit PSD-NM-1000-B

Methodology

PTE of PM, PM10, SO₂, and VOC (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x

PTE of NO_x and CO (tons/yr) = Emission Factor (lbs/hr) x 8760 hrs/yr x 1 ton/2000 lbs

2. Potential to Emit HAPs

Pollutant	Emission Factor (lbs/MMBtu)	PTE of HAP (tons/yr)
1,3-Butadiene	4.30E-07	1.77E-04
Acetaldehyde	4.00E-05	1.65E-02
Acrolein	6.40E-06	2.63E-03
Benzene	1.20E-05	4.94E-03
Ethylbenzene	3.20E-05	1.32E-02
Formaldehyde	7.10E-04	2.92E-01
Naphthalene	1.30E-06	5.35E-04
PAH	2.20E-06	9.05E-04
Propylene Oxide	2.90E-05	1.19E-02
Toluene	1.30E-04	5.35E-02
Xylene	6.40E-05	2.63E-02
Total HAPs		0.40

Note: Emission factors are from AP-42, Chapter 3.1, Table 3.1-3 for NG Fired Stationary Turbine (04/00).

Methodology

PTE of HAPs (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2000 lbs

Emission Calculations

(1) NG Fired Reciprocating Engine (.
PNG - White Rock Compressor Static
4 Section 15, Township 23-N, Range
2 miles east of Newcomb, New Mexico

Heat Input Capacity
MMBtu/hr

Max. Power Output
hp

2.60

365

1. Potential to Emit of Criteria Pollutants

	Pollutant					
Emission Factor	PM*	PM10**	SO ₂ **	NO _x ***	VOC**	CO***
PTE (tons/yr)	1.0E-01 (lbs/hr)	1.0E-01 (lbs/hr)	2.0E-03 (lbs/hr)	1.61 (lbs/hr)	2.01 (lbs/hr)	3.02 (lbs/hr)

*The emission factor for SO₂ is from AP-42, Chapter 3.2, Table 3.2-2 for 4-stroke lean burn engines (7/00) plus

**The PM, PM10, and VOC emission factors were provided by the source based on the average test results for 1 plus a 25% safety margin.

***The NO_x, and CO emission factors are the emission limits in permit PSD-NM-1000-B

Methodology

PTE of SO₂ (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 1.25 x 8760 hrs/yr x 1

PTE of PM10, SO₂, NO_x, and VOC(tons/yr) = Emission Factor (lbs/hr) x 8760 hrs/yr x 1 ton/2000 lbs

2. Potential to Emit HAPs

Pollutant	Emission Factor (lbs/MMBtu)	PTE of HAP (tons/yr)
Acetaldehyde	8.36E-03	9.52E-02
Acrolein	5.14E-03	5.85E-02
Benzene	4.40E-04	5.01E-03
Ethane	1.05E-01	1.20
Formaldehyde	5.28E-02	0.60
Methanol	2.50E-03	2.85E-02
Propane	4.19E-02	4.77E-01
Hexane	1.11E-03	1.26E-02
Xylene	1.84E-04	2.10E-03
Total HAPs		2.47

Emission factors for HAPS are from AP-42, Chapter 3.2, Table 3.2-2 for 4-stroke lean burn engines.

Methodology

PTE of HAPs (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2

Emission Calculations
From One (1) NG Fired Emergency Reciprocating Engine (A1
EPNG - White Rock Compressor Station
E 1/4 Section 15, Township 23-N, Range 14-
22 miles east of Newcomb, New Mexico

Heat Input Capacity Max. Power Output
 MMBtu/hr hp

4.40	400
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1. Potential to Emit of Criteria Pollutants

	Pollutant	PM*	PM10*	SO ₂ **	NO _x **	VOC**	CO*
Emission Factor		1.94E-02 (lbs/MMBtu)	1.94E-02 (lbs/MMBtu)	5.88E-04 (lbs/MMBtu)	8.00 (lbs/hr)	1.18E-01 (lbs/MMBtu)	1.40 (lbs/hr)
PTE (tons/yr)		4.27E-03	4.27E-03	1.29E-04	0.40	2.60E-02	0.07

*The emission factors for PM, PM10, SO₂, and VOC are from AP-42, Chapter 3.2, Table 3.2-2 for 4-stroke lean burn engines.

PM10 includes filterable PM10 and condensable PM.

**The NO_x and CO emission factors are the emission limits in permit PSD-NM-1000-B

Methodology

PTE of PM (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2000 lbs

PTE of SO₂, NO_x, CO, and VOC(tons/yr) = Emission Factor (lbs/hr) x 8760 hrs/yr x 1 ton/2000 lbs

2. Potential to Emit HAPs

Pollutant	Emission Factor (lbs/MMBtu)	PTE of HAP (tons/yr)
Acetaldehyde	8.36E-03	1.84E-03
Acrolein	5.14E-03	1.13E-03
Benzene	4.40E-04	9.68E-05
Ethane	1.05E-01	2.31E-02
Formaldehyde	5.28E-02	1.16E-02
Methanol	2.50E-03	5.50E-04
Propane	4.19E-02	9.22E-03
Hexane	1.11E-03	2.44E-04
Xylene	1.84E-04	4.05E-05
Total HAPs		0.05

Emission factors for HAPS are from AP-42, Chapter 3.2, Table 3.2-2 for 4-stroke lean burn engines.

Methodology

PTE of HAPs (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 100 hrs/yr x 1 ton/2000 lbs

Emission Calculations
From Two (2) Microturbines (AUX A-03 and AUX A-04)
EPNG - White Rock Compressor Station
NE 1/4 Section 15, Township 23-N, Range 14-W
22 miles east of Newcomb, New Mexico

Heat Input Capacity MMBtu/hr	Max. Power Output hp
0.43	40

1. Potential to Emit of Criteria Pollutants

Emission Factor	Pollutant						
	PM*	PM10*	SO ₂ *	NO _x **	VOC**	CO**	
AUX A-03	6.60E-03 (lbs/MMBtu)	6.60E-03 (lbs/MMBtu)	3.40E-03 (lbs/MMBtu)	4.91E-04 (lbs/KWh)	1.71E-04 (lbs/KWh)	1.33E-03 (lbs/KWh)	
AUX A-04	1.56E-02 1.56E-02	1.56E-02 1.56E-02	8.06E-03 8.06E-03	8.02E-02 8.02E-02	2.79E-02 2.79E-02	2.17E-01 2.17E-01	
Total	0.03	0.03	0.02	0.16	0.06	0.43	

*The emission factors for PM, PM10, and SO₂ are from AP-42 emission factor (4/00).

**The NOx, VOC and CO emission factors are the Manufacturer emission factors

1 hp = 0.746 KW

Methodology

PTE of PM and SO₂ (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2000 lbs
PTE of NOx, CO, and VOC(tons/yr) =Max Output (hp) x Emission Factor (lbs/KWh) x 0.746 Kw/1hp *8760 hrs/yr x 1 ton/2000 lbs

2. Potential to Emit HAPs

Pollutant	Emission Factor (lbs/MMBtu)	PTE of HAP (tons/yr)
Acetaldehyde	7.59E-05	1.64E-06
Acrolein	1.21E-05	2.62E-07
Benzene	2.28E-05	4.94E-07
Ethane	6.07E-05	1.31E-06
Formaldehyde	1.35E-05	2.92E-07
Methanol	2.50E-03	5.41E-05
Propane	4.19E-02	9.07E-04
Hexane	1.11E-03	2.40E-05
Xylene	1.84E-04	3.98E-06
Total HAPs		0.001

Methodology

PTE of HAPs (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2000 lbs

Emission Calculations
Potential to Emit Greenhouse Gases
EPNG - White Rock Compressor Station
NE 1/4 Section 15, Township 23-N, Range 14-W
22 miles east of Newcomb, New Mexico

Emission Unit ID	Site Rating		Hours of Operation	Emission Factors (kg/MMBtu)				Varm
	Hp	MMBtu/hr		CO ₂	CH ₄	N ₂ O	CH ₄	
A-01	10,040	79.2	8,760	53.02	1.00E-03	1.00E-04	21	
A-02	13,830	93.9	8,760	53.02	1.00E-03	1.00E-04	21	
AUX A-01	365	2.6	8,760	53.02	1.00E-03	1.00E-04	21	
AUX A-02	400	4.4	100	53.02	1.00E-03	1.00E-04	21	
AUX A-03	40	0.4	8,760	53.02	1.00E-03	1.00E-04	21	
AUX A-04	40	0.4	8,760	53.02	1.00E-03	1.00E-04	21	
Total								

1 kg = 2.20462 lb

Emission factors for natural gas were obtained from Tables C-1 and C-2 of 40 CFR 98, Subpart C
Global Warming Potentials were obtained from IPCC's Second Assessment Report (SAR, 1996)

Emission Rate (lb/hr) = Heat Input (MMBtu/hr)*Emission Factor (kg/MMBtu)*(2.20462 lbs/1 kg)
Total Emissions (tpy) = Emission Rate (lbs/hr)* Operating Hours (hrs/year)* (1 ton/2000 lbs)

ing P	Emission Rate (lb/hr)				Emissions (tpy)				
	N ₂ O	CO ₂	CH ₄	N ₂ O	CO ₂ e	CO ₂	CH ₄	N ₂ O	CO ₂ e
310	9,258	0.17	0.017	9,267	40,548	0.8	0.1	40,588	
310	#####	0.21	0.021	#####	48,074	0.9	0.1	48,121	
310	304	0.01	0.001	304	1,331	0	0	1,332	
310	514	0.01	0.001	515	26	0.0	0.0	26	
310	51	0	0	51	222	0	0	222	
310	51	0	0	51	222	0	0	222	
					90,423	2	0	90,512	

Emission Calculations
Potential to Emit Summary
EPNG - White Rock Compressor Station
: 1/4 Section 15, Township 23-N, Range 14
22 miles east of Newcomb, New Mexico

Emission Units	PM (tons/yr)	PM10 (tons/yr)	SO ₂ (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	Total HAPs (tons/yr)
A-01	2.29	2.29	1.18	177	0.73	32.1	0.33
A-02	2.71	2.71	1.40	66.4	0.86	46.8	0.40
AUX A-01	0.44	0.44	0.01	7.05	8.80	13.2	2.47
AUX A-02**	-	-	-	-	-	-	-
AUX A-03 & AUX A-04	0.03	0.03	0.02	0.16	0.06	0.43	0.001
Insignificant Activities *	5.00	5.00			5.00		Negligible
Total PTE	10.5	10.5	2.60	251	15.5	92.5	3.21

* This is an estimate on the PM/PM10 emissions from the fugitive VOC emissions from equipment leaks,

** Pursuant to PSD-NM-1000-B, unit AUX-A02 can only operate when unit AUX-A01 is not in operation. Since unit AUX-02 does, the total PTE for the entire source does not include the PTE for AUX-A02 (worst case)